

What is claimed is:

1. A radio transmitter comprising:

a power amplifier;

5 a variable gain amplifier connected in series with said power amplifier;

bias voltage apply means for applying a bias voltage to said power amplifier;

gain control means for controlling a gain of said variable gain amplifier;

10 bias voltage control means for controlling the bias voltage of said power amplifier; and

compensation means for compensating a gain variation of said power amplifier involved in controlling the bias voltage of said power amplifier by controlling the gain of said variable gain amplifier.

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2. The radio transmitter according to claim 1, wherein said bias voltage control means controls the bias voltage of said power amplifier in response to desired output power of said power amplifier.

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3. The radio transmitter according to claim 2, wherein said compensation means comprises information about relationships between the desired output power of said power amplifier and the bias voltage of said power amplifier, and information about relationships between the bias voltage of said power amplifier and the gain of said variable gain amplifier.

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4. The radio transmitter according to claim 2, wherein the bias voltage of said power amplifier is varied at least at two steps.

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5. The radio transmitter according to claim 3, wherein the bias voltage of said power amplifier is varied at least at two steps.

5 6. The radio transmitter according to claim 1, wherein said compensation means compensates for the gain variation of said power amplifier involved in controlling the bias voltage of said power amplifier, by deriving idle current of said power amplifier from desired output power of said power amplifier, by deriving
10 the bias voltage of said power amplifier and the gain of said variable gain amplifier from the idle current of said power amplifier, and by supplying said bias voltage control means and said gain control means with the bias voltage and gain derived.

15 7. The radio transmitter according to claim 6, wherein said compensation means comprises information about relationships between the desired output power of said power amplifier and the idle current of said power amplifier, information about relationships between the idle current of said power amplifier
20 and the gain of said variable gain amplifier, and information about relationships between the idle current of said power amplifier and the bias voltage of said power amplifier.

8. The radio transmitter according to claim 6, wherein the bias
25 voltage of said power amplifier is varied at least at two steps.

9. The radio transmitter according to claim 7, wherein the bias voltage of said power amplifier is varied at least at two steps.